

## ON A COLLECTION OF PELECYPODA FROM THE PHILIPPINE ISLANDS.

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## PLATE I.

THIS small collection, submitted to me for determination, is not of very special interest beyond the fact that it comprises a number of species not previously recorded from the Philippine Islands, with seven which appear to be undescribed.

The specimens were all collected at Port Galera, a small bay almost completely landlocked, on the north coast of Mindoro, opposite the town of Batangas, on the island of Luzon.

Of the fifty-nine species enumerated rather more than half have already been recorded from the Philippines, and those which appear to be new to the fauna are marked with an asterisk. The identification of the specimens<sup>1</sup> has been much facilitated by the catalogue of the Pelecypoda of these islands published by Dr. J. G. Hidalgo in the Mem. R. Acad. Ciencias Madrid, vol. xxi, 1903, pp. i-v, 1-400, and in the Revista R. Acad. Ciencias Madrid, vol. ii, 1905, pp. 246-312, and vol. iii, 1905, pp. 9-43.

## A. LIST OF THE SPECIES.

## Family SOLENIDÆ.

- 1\*. *Solen sloanii*, Gray (?). Two young valves.

## Family CORBULIDÆ.

2. *Corbula crassa*, Hinds.  
3. *C. taitensis*, Lamarek.

## Family PAPHIDÆ.

- 4.\* *Paphia macrodon*, Deshayes.

## Family ANATINIDÆ.

5. *Myodora oblonga*, Reeve.

## Family PSAMMOBIIDÆ.

6. *Psammobia squamosa*, Lamarek.  
7. *P. layardi*, Deshayes.  
8.\* *P. philippinensis*, n.sp.

## Family TELLINIDÆ.

9. *Tellina (Homala) inflata*, Chemnitz.  
10. *T. (Arcopagia) pinguis*, Hanley.

<sup>1</sup> A set of the specimens enumerated has been presented by Professor L. E. Griffin to the British Museum (Nat. Hist.), where the types of the seven new species are also preserved.

11. *T. (A.) carnicolor*, Hanley.
12. *T. (A.) pretiosa*, Deshayes.
- 13.\* *T. (Fabulina) valtonis*, Hanley.
14. *T. (F.) rhomboides*, Quoy & Gaimard.
- 15.\* *T. (Tellinella) sp.* One valve only, allied to *subtruncata*, Hanley.
16. *T. (Tellinides) oralis*, Sowerby.

## Family PETRICOLIDÆ.

- 17.\* *Petricola digitale*, n.sp.

## Family VENERIDÆ.

18. *Dosinia histrio*, Gmelin.
- 19.\* *D. subalata*, n.sp.
20. *Callista erycina*, Linnæus, var.
21. *C. roseotincta*, Smith.
22. *Pitaria hebræa*, Lamarck.
23. *Circe scripta*, Linnæus.
- 24.\* *C. lirata*, Römer.
25. *C. barandæ*, Hidalgo.
26. *Lioconcha picta*, Lamarck.
27. *L. philippinarum*, Hanley.
- 28.\* *Antigona (Ventricola) mindoroensis*, n.sp.
29. *A. (Circomphalus) foliacea*, Philippi.
30. *Venus (Chione) recognita*, Smith.
31. *Tapes quadriradiata*, Deshayes.

## Family CARDIIDÆ.

32. *Cardium (Lævicardium) biradiatum*, Bruguière.
- 33.\* *C. (Trachycardium) nebulosum*, Reeve, juv.
- 34.\* *Hemicardium (Fragum) fornicatum*, Sowerby.
35. *H. (F.) hemicardium*, Linnæus.
36. *H. (Lunulicardia) subretusum*, Sowerby.

## Family LUCINIDÆ.

- 37.\* *Lucina euglypta*, n.sp.
- 38.\* *L. transversa*, n.sp.

## Family UNGULINIDÆ.

- 39.\* *Diplodonta sp.* One valve only.

## Family ERYCINIDÆ.

40. *Galeomma argentea*, Deshayes.

## Family CRASSATELLIDÆ.

41. *Crassatellites lapideus*, Reeve.

## Family CARDITIDÆ.

42. *Cardita canaliculata*, Reeve.

## Family ARCIDÆ.

- 43.\* *Arca* (*Anomalocardia*) *clathrata*, Reeve.
- 44.\* *A.* (*A.*) sp. One young specimen.
- 45.\* *A.* (*Barbatia*) *parva*, Sowerby.
- 46. *Glycimeris pectunculus*, Linn., var.
- 47.\* *G. planata*, Nevill.
- 48. *G. reevei*, Mayer.
- 49.\* *G. mindoroensis*, n.sp.
- 50.\* *Limopsis cancellata*, Reeve.

## Family MYTILIDÆ.

- 51. *Modiola flavida*, Dunker.

## Family PECTINIDÆ.

- 52.\* *Chlamys cristularis*, A. Adams & Reeve.
- 53.\* *C. blandus*, Reeve.
- 54.\* *C. nux*, Reeve.
- 55. *C. spectabilis*, Reeve, var.
- 56.\* *C.* sp. One valve.
- 57.\* *C.* sp. Two young specimens.
- 58. *Pecten inæquivalvis*, Sowerby.

## Family PLACUNIDÆ.

- 59. *Placuna* sp. One young valve.

## B. NOTES ON SOME OF THE SPECIES.

PAPHIA MACRODON, Deshayes, Proc. Zool. Soc., 1854, p. 339, as *Mesodesma*; Reeve, Conch. Icon., vol. viii, fig. 23.

The locality of this species was not known to Deshayes or Reeve, and Hidalgo has not recorded the species in his list of Philippine Pelecypoda.

CALLISTA ROSEOTINCTA, Smith, Rep. Challenger Lamellibr., 1885, p. 136, pl. i, figs. 6-6b.

When describing this species I suggested that it probably attained larger dimensions than those then given. In a series of specimens in the present collection one example is 20.5 mm. in length, which is only 3 mm. larger than the type. I am now inclined to think that it does not become much larger. The general tone of colour is rather like that of "*Dione festiva*" as given by Reeve (Conch. Icon., vol. xiv, *Dione*, pl. i, fig. 2). Usually there are at intervals zones of a darker tint than the ground colour, and in some specimens there are distinct, more or less interrupted rays. In the fresh specimens at hand the interior of the valves is whitish round the margin, but purplish elsewhere, with a pale ray from the umbo downwards. All the specimens have the tips of the umbones rosy pink.

ANTIGONA (CIRCOMPHALUS) FOLIACEA, Philippi, Abbild., vol. ii, 1846, p. 107, pl. v, fig. 1.

The specimens in the present collection belong to that form of the species figured by Reeve (Conch. Icon., vol. xiv, figs. 109b and 110)

as *Venus tiara*, Dillwyn, and by Sowerby (Thes. Conch., vol. ii, 1853, pl. clviii, figs. 125, 126) also as *tiara*.

This variety differs from the typical form of the species, as figured by Philippi, in having the concentric laminæ more prominently foliated posteriorly, a groove down the dorsal slope, a little distance from the margin, cutting through the lamellæ and thus forming an upper or marginal series of short lamellæ.

GLYCIMERIS PECTUNCULUS (Linn.), var.

The single specimen in the present collection is flatter than usual, and the costæ are more slender than in normal examples, and consequently the intervening grooves are broader. Another slight distinction is the absence of brown colour on the hinge-plate, a conspicuous feature in *G. pectunculus* and *G. muskatensis*, Melvill. The latter attains much larger dimensions than those given by the author of his type. Specimens in the British Museum from Muscat, presented by Dr. Jayakar, are 41 mm. high, 43 long, and 27 in diameter, in fact almost double the size of Mr. Melvill's shell.

GLYCIMERIS REEVEI (Mayer), Viertelj. Naturf. Ges. Zürich, vol. xiii, 1868, p. 23, as *Pectunculus*.  
= *Pectunculus angulatus*, Reeve (*non* Lamarck), Conch. Icon., vol. i, fig. 30.

A number of young shells 16-19 mm. in length appear to be immature examples of this species. At this stage of growth the sculpture is more raised, the radiating threads and concentric striæ which cross them producing a granose surface. The radiating threads are in groups of about four or five on the middle of the valves, the groups being marked off by pale striæ. At the sides they are not in groups, and between them the grooves exhibit very short bristles. The colour is variable, usually light or dark brown with irregular white blotchings.

GLYCIMERIS PLANATUS (G. & H. Nevill), Journ. Asiat. Soc. Bengal, vol. xliii, pt. ii, 1874, p. 29, pl. i, figs. 16, 16a, as *Pectunculus*.

This Pecten-like species has hitherto been known only from the Andaman Islands. The colour was described as "white, mottled, and variegated with brown." The specimens from the Philippine Islands are white spotted with red, the spots being only on the radiating ribs, and disposed in irregular concentric rows. The interior is white with a faint purplish stain below the umbones down the middle of the valves. One or two of the costæ on each side near the hinge-line are slender, simple, and not grooved down the middle like those on the rest of the shell. The largest specimen is 20.5 mm. in height, 21 long, 10.5 in diameter. A specimen from the Andaman Islands in the British Museum is about the same size.

#### C. DESCRIPTIONS OF THE NEW SPECIES.

PSAMMOBIA PHILIPPINENSIS, n.sp. Pl. I, Figs. 16-18.

Shell transversely elongate, slightly inequilateral, anterior portion rather the longer, sharply rounded at both ends, somewhat more

acuminate behind, white with a few remote brown marks on the dorsal margins both in front and behind the umbones; both dorsal margins only slightly oblique, ventral margin little arcuate in the middle, but curving upward at both ends; valves thin, sculptured with fine growth-lines, crossed by fine threads which radiate from the umbones, the thread towards the hinder end being more distinct than those in front; upon the posterior excessively fine striæ are observable which curve from the margin towards the other radiating threads; umbones brown at the tip, in the form of a minute glossy boss or knob of a different texture to that of the rest of the shell; interior of valves glossy white; hinge-characters normal; pallial sinus tongue-like, rounded at the end, not reaching quite half-way across the valves.

Length 8.5, height 4.75, diameter 3 mm.

This species resembles *P. candidula*, Deshayes, somewhat in form, but it is very differently sculptured. The generic term *Gari*<sup>1</sup> of Schumacher is used by some authors as being anterior to *Psammobia* of Lamarck, but to employ a word with a genitive termination as a genus hardly seems admissible.

PETRICOLA DIGITALE, n.sp. Pl. I, Figs. 7, 8.

Shell small, sub-quadrate, rather convex and inequilateral, white, slightly iridescent, thin, sculptured with excessively fine criss-cross raised threads, so that the surface presents a punctate appearance rather like a thimble; here and there at intervals shallow waves of growth are also observable; anterior end obtusely rounded, posterior broader, curvedly sub-truncate, ventral margin straightish, not much curved; anterior dorsal edge oblique, slightly curved, posterior longer, straighter, less descending; lunular area large, defined by a distinct curved impressed line in each valve, extending from the umbo to the end of the dorsal slope; the surface, unlike the rest of the shell, for the most part exhibits little punctation, but merely the most delicate growth-striæ. Umbones raised a little above the hinge-margin, contiguous, smooth, with only delicate growth-striæ; three cardinal teeth in the left valve, the central one thick,  $\Lambda$ -shaped, the others oblique, one on each side divergent from the umbo; right valve with two divergent slender teeth which fall, when the shell is closed, one on each side of the central tooth of the left valve; adductor scars large, anterior pyriform, posterior a little broader; pallial sinus large, broad, ascending high and beyond the middle of the valve, rounded at the end; hinge-ligament occupying about half the posterior dorsal margin, yellowish.

Length 6, height 5.5, diameter 4 mm.

This shell has not the appearance of being the young of a larger form, since it is considerably convex, and rather like certain forms of *Sphærium* or *Kellia* in general aspect. The surface to the naked eye appears smooth, and the punctate or thimble-like appearance of the surface is only visible under a lens.

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<sup>1</sup> From the Latin *garum*, a fish-sauce, made from the fish *garus*.

The young of *P. lapicida* (Chemnitz) Gmelin, has somewhat the form of this species, but the sculpture is different, being coarser, and it has no definite lunular area. A single valve from Flinders Passage, North Australia, recorded in my report on the *Challenger* Lamelli-branchiata, p. 118, belongs to the present species and not to *P. lapicida*.

*DOSINIA SUBALATA*, n.sp. Pl. I, Figs. 11-13.

Shell subcircular, moderately convex, rather thin, white with rosy tips to the umbones, very delicately concentrically striated at first and then rather more distantly towards the base, the threads between the striæ smooth upon the central part of the valves and becoming finely lamellar both anteriorly and behind; lunule elongate-cordate, prominent in the middle, fairly striated; escutcheon raised and keeled down the middle, defined by a shallow depression in each valve extending from near the umbones nearly the whole length of the posterior dorsal margin; the valves at this part consequently exhibit a narrow wing-like prominence; interior of valves whitish; anterior adductor scar narrow, elongate, posterior pyriform; pallial sinus long, tongue-like, extending some way beyond the middle of the valves, blunt at the end; hinge normal.

Length 25, height 24, diameter 11 mm.

Allied to *D. lucinalis*, Lamarek, of which *D. striatissima*, Sowerby, is a synonym. The concentric sculpture of the present species, however, is finer, and it lacks the radiating striæ of *D. lucinalis*. The form of the latter is somewhat different, being shorter in proportion to the height. The pallial sinus is considerably longer in *D. subalata*.

*D. celata*, Reeve, is even more closely related, and differs only in having stronger lamellæ in front and behind, a larger and much deeper dorsal area marked off by a sharper cristate keel, and a slightly shorter pallial sinus.

*ANTIGONA (VENTRICOLA) MINDOROENSIS*, n.sp. Pl. I, Figs. 1-3.

Shell sub-globose, very inequilateral, white, with four curved, sub-equidistant, reddish rays, concentrically delicately lamellated, the lamellæ being thin, erect, and cross-striated on the lower side; between the lamellæ the surface exhibits fine thread-like lines, four or five in each interval, also excessively minute curved radiating striæ; lunule broadly cordiform, brown, sunken except in the middle, where it is a little raised; marked with fine raised lines of growth; escutcheon deep, defined by a sharp keel in the left valve, upon which the lamellæ terminate; the portion of the escutcheon in the right valve is smaller than that of the left and less sharply defined, the lamellæ extending further over towards the edge of the valve; umbones yellowish or pale brown at the smooth tips which curve forward over the lunule; interior of the valves white outside the pallial line, very faintly tinted with a kind of flesh tint within the pallial line, which is shortly angularly sinuated; inner edge of the valves very finely crenulated all round excepting on the hinder dorsal margin, the crenulations on the edge of the lunule being finer than those on the ventral edge; anterior adductor scar ovate, posterior larger, sub-reniform.



Length 30, height 28, diameter 16 mm.

A specimen in the British Museum, said to come from Hong-Kong, is a little larger than the Philippine specimen, being 37 mm. long, 35 high, and 21 in diameter.

*V. rigida*, Dillwyn, of which *V. pilula*, Reeve, is a synonym, in some respects resembles the present species. It is, however, rounder, more globose, differently coloured, has less erect and less delicate lamellæ, and the spotting on the escutcheon, in the left valve only, is peculiar. It is a West Indian shell.

*LUCINA EUGLYPTA*, n.sp. Pl. I, Figs. 4-6.

Shell irregularly rounded, inequilateral, white, concentrically finely closely lamellated and radially costate between the lamellæ, which are finely frilled through crossing the costæ; valves moderately thick, with a depression marking off a wing-like portion below the straight posterior dorsal margin; lunule very small, deep, under the umbones, which are contiguous, but the tips curl away over the lunule; beyond this there is another ill-defined lunular space enclosed by a slight curved depression on the valves; there are no radiating costellæ upon the hinder wing-like portion of the valves, or upon the lunular space, and consequently the concentric lamellæ are simple and not frilled; interior of the valves white, with the lower margin slightly denticulated; posterior adductor scar pyriform, anterior narrow, long; dentition normal.

Length 17, height 16, diameter 9 mm.

This species bears some resemblance to *L. gemma*, Reeve, in respect of the wing-like hinder part of the valves. There is a great difference in the surface ornamentation of the two species. *L. gemma* has no radiating costæ between the concentric lamellæ, which are beautifully denticulate or serrate. It is also a much flatter species than that now described.

*LUCINA TRANSVERSA*, n.sp. Pl. I, Figs. 9, 10.

Shell oblong, transverse, almost equilateral, white, concentrically finely ridged, finely yet roughly radiately striated between the concentric ridges or liræ; valves rounded in front with a cristate keel behind, marking off an elongate, lanceolate escutcheon exhibiting only fine growth-lines; lunule sunken, elongate, marked with fine lines of growth; umbones smooth at the tips, contiguous; the posterior keel, which is crested with the concentric lamellæ, forms a point at the hinder end of the valves; interior white; posterior adductor scar rounded except above, where it is as if truncate; anterior scar short, irregularly ovate.

Length 10.75, height 8, diameter 4.75 mm.

Allied to *L. fabula*, Reeve, but more closely concentrically ridged, and not so strongly or regularly striated between the ridges. There are also differences in form.

*GLYCIMERIS MINDOROENSIS*, n.sp. Pl. I, Figs. 14, 15.

Shell small, irregularly rounded, slightly inequilateral, whitish, with small scattered pinkish spots or dots upon the radiating costæ;

